



# GRINNELL

## AUTOMATIC FIRE PROTECTION SYSTEMS





HOW TO PROTECT  
YOUR PROPERTY FROM

**FIRE**





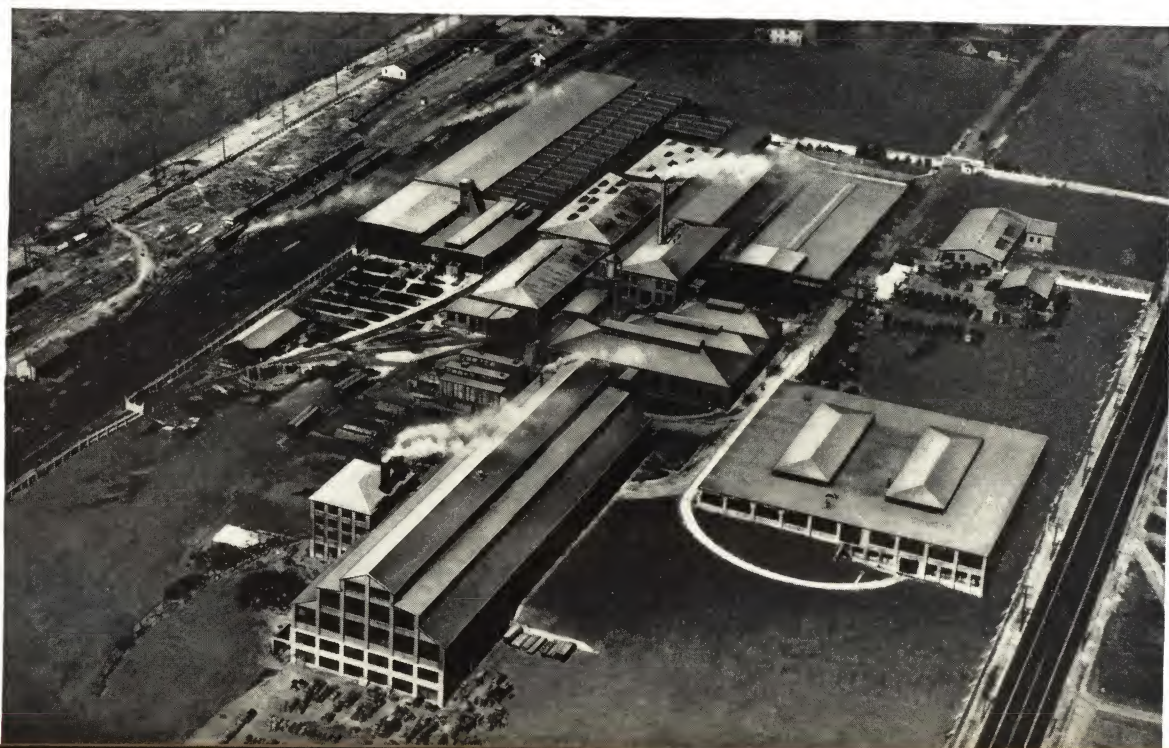
# EVER-CHANGING INDUSTRIAL ACTIVITY

## *Intensifies Fire Hazards*

**E**VER-CHANGING manufacturing methods and processes bring with them new fire hazards. Greater concentration of equipment . . . faster production . . . stocks of highly inflammable synthetic materials . . . warehouses filled with raw or finished materials . . . air conditioning, ventilating and pneumatic collecting and conveying installations, with their intricate duct systems expanding to almost all types of occupancies — all of these multiply the possibilities of fire.

Many executives, entrusted with the safety of life and property, have never experienced a disastrous fire. Too often, their good fortune has built a false sense of security against an ever-lurking menace. They look upon their investment in fireproofing and the annual payment of large insurance premiums as an adequate safeguard. Or, as yesterday's victims of fire once felt, they may feel satisfied that it cannot happen to them.

What would happen if a fire should break out suddenly in your plant or property and, unnoticed and unchecked, gain headway during those first fateful minutes? Can you depend upon the human element to prevent its spread and destruction? *Statistics prove very definitely that you cannot. . . .*



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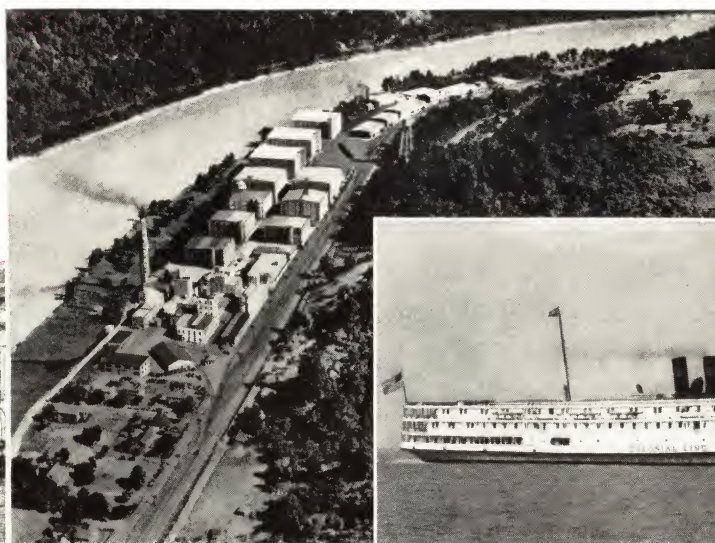


# GRINNELL MEETS THE CHALLENGE OF

## *New Fire Protection Problems*

**R**EGARDLESS of plant design, changes in building construction, structures of unusual heights or with tremendous floor areas, there is one sure way to eliminate for all time the possibilities of destruction by fire and resulting disruption of service or production. . . .

Grinnell has solved every one of these baffling fire protection problems. Thousands of industrial plants, commercial buildings and institutions, valued at more than fifty billion dollars, are operating steadily without danger of crippling fires. *Today, the Grinnell Automatic Sprinkler System is recognized as the world's most dependable fire protection agency.*





# A GRINNELL AUTOMATIC SPRINKLER SYSTEM *Completes* THE PROTECTION OF A "FIREPROOF" BUILDING

**A**N ANALYSIS of building construction shows that there are literally thousands of buildings in all parts of the country today that are of ordinary construction—brick buildings with floors, stairways, and interior trim of wood. There are many others which, because of their modern construction of steel, concrete and other incombustible materials, are considered "fireproof."

While the merits of "fireproof" construction are beyond question, all that can be expected from incombustible building materials, in case of fire, is passive resistance. No matter how many of the seventy odd means an architect or engineer may employ to

make a structure fireproof, none of them will protect combustible *contents* unless measures are taken to provide protection on the inside. The use of the most up-to-date fire-resistive building materials at best will only *confine* a fire to its room or floor of origin. Inflammable contents of such buildings catch fire and, if the fire is not checked or extinguished, the interior may become a blazing inferno. Walls and supports, weakened by the intense heat, collapse and the building becomes a mass of tangled debris.

When a Grinnell Automatic Sprinkler System is installed, the contents of the building are fully protected.

A fire developing in any part of the area protected is stopped at its source—before it can develop to any proportions. Whether a building is of "fireproof" construction or not, a Grinnell Automatic Sprinkler System will protect the building and its contents from fire.



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# A GRINNELL AUTOMATIC SPRINKLER SYSTEM KEEPS A GOING BUSINESS RUNNING *Smoothly*

**N**EWSPAPER HEADLINES vividly told the story of the uncontrollable conflagrations in Chicago, San Francisco, Baltimore and Fall River. Thousands of prosperous businesses, large and small, were wiped out because they lacked proper protection against fire.

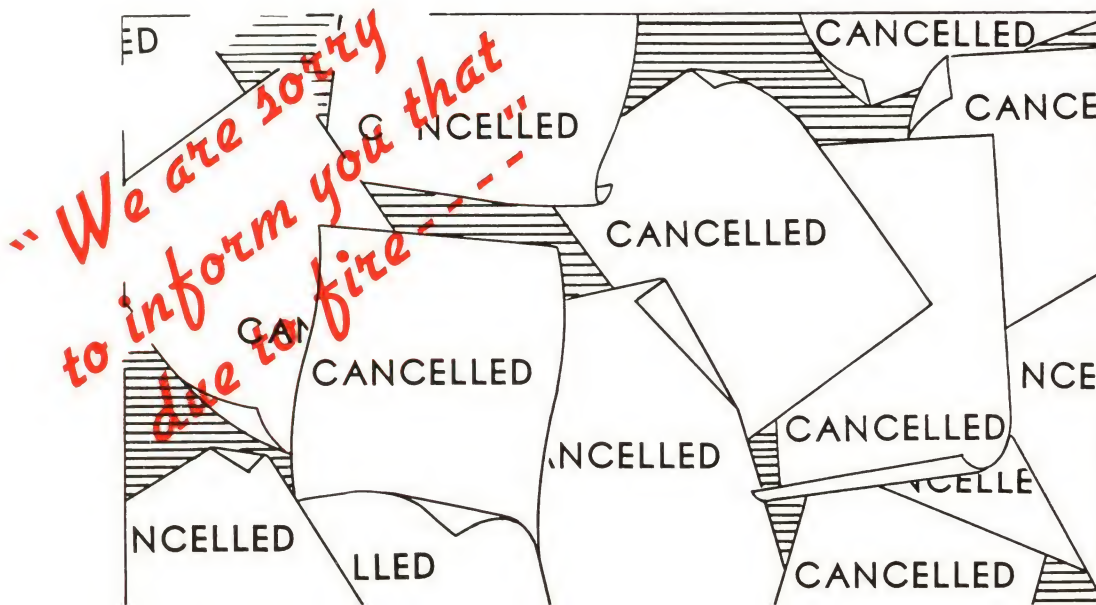
Daily there are fires that go almost unannounced but which mean destruction to individual enterprises. Small fires . . . they are usually called. To the business burned they mean lost equipment and records: these are the tangible losses. Many times it is in the intangibles that the loss is more keenly felt — cancelled contracts . . . lost profits on unfinished goods . . . destruction of vital sales and purchasing records . . . customers forced to turn to other sources for goods, never to return . . . trained employees obliged to seek work elsewhere . . . tenants forced to move to other quarters. *No insurance check can ever reimburse its recipient for these losses.*

Of every 100 unsprinkled plants burned in the United States—

- 43 fail to resume operations
- 14 suffer reduced credit
- 17 fail to issue financial statements
- 26 escape with only a loss of customers

*All of this regardless of insurance.*

**C**ONTRAST this with the security from business disruption which exists in plants safeguarded by Grinnell Automatic Sprinklers. Should a fire start at any time during the day or night, the Grinnell Automatic Sprinkler head instantly quenches it and simultaneously sounds an alarm, both inside and outside the building. Within a few minutes the sprinkler head opened by the fire is replaced and the system is once again on guard. Losses are insignificant.





# HOW A GRINNELL SPRINKLER SYSTEM *affects* INSURANCE RATES

*Converts* AN EXISTING EXPENSE

INTO A CAPITAL INVESTMENT

**B**Y FAR the greatest part of the annual fire loss of this country is paid by business men. The question to be considered then is whether the insurance premiums shall be an ever-existing expense or converted into a capital investment.

Insurance rates are based on fire danger, and the fire danger practically expresses the rate of burning. Obviously, therefore, anything which reduces the rate of burning should reduce the rate of insurance to a corresponding degree.

This is exactly what a Grinnell Automatic Sprinkler System does. With a Grinnell installation, insurance premiums are reduced—sometimes as much as 40% to 90%—because insurance records have shown that with it, the chance of a serious fire is negligible. In many cases, this reduction in the insurance premium

is sufficient to return the investment in a sprinkler system within a very few years. After that, the savings are clear gain.

## AN ASSET—NOT AN EXPENSE

It is evident, therefore, that property owners who are not protected by a Grinnell Automatic Sprinkler System are actually paying for it without enjoying its protection. With the highly advantageous insurance rate which usually accompanies the installation of a Grinnell Sprinkler System, it is not a question of whether one wishes to incur the installation cost of such a system. Instead it is whether one wishes to divert an item of expense into a capital asset. The following table—also the chart on the opposite page—illustrates this point.

INSURANCE SAVINGS TABLE

Year	Payments to Grinnell Co.	Insurance Savings	New Capital Required		% Return on New Capital
			Annual	Accumulated	
1	\$ 5,000	\$ 3,000	\$ 2,000	\$ 2,000	150%
2	5,000	3,000	2,000	4,000	75%
3	5,000	3,000	2,000	6,000	50%
4	5,000	3,000	2,000	8,000	37½%
5	5,000	3,000	2,000	10,000	30%
End of 5th Yr.	\$25,000	\$15,000	\$10,000		68%

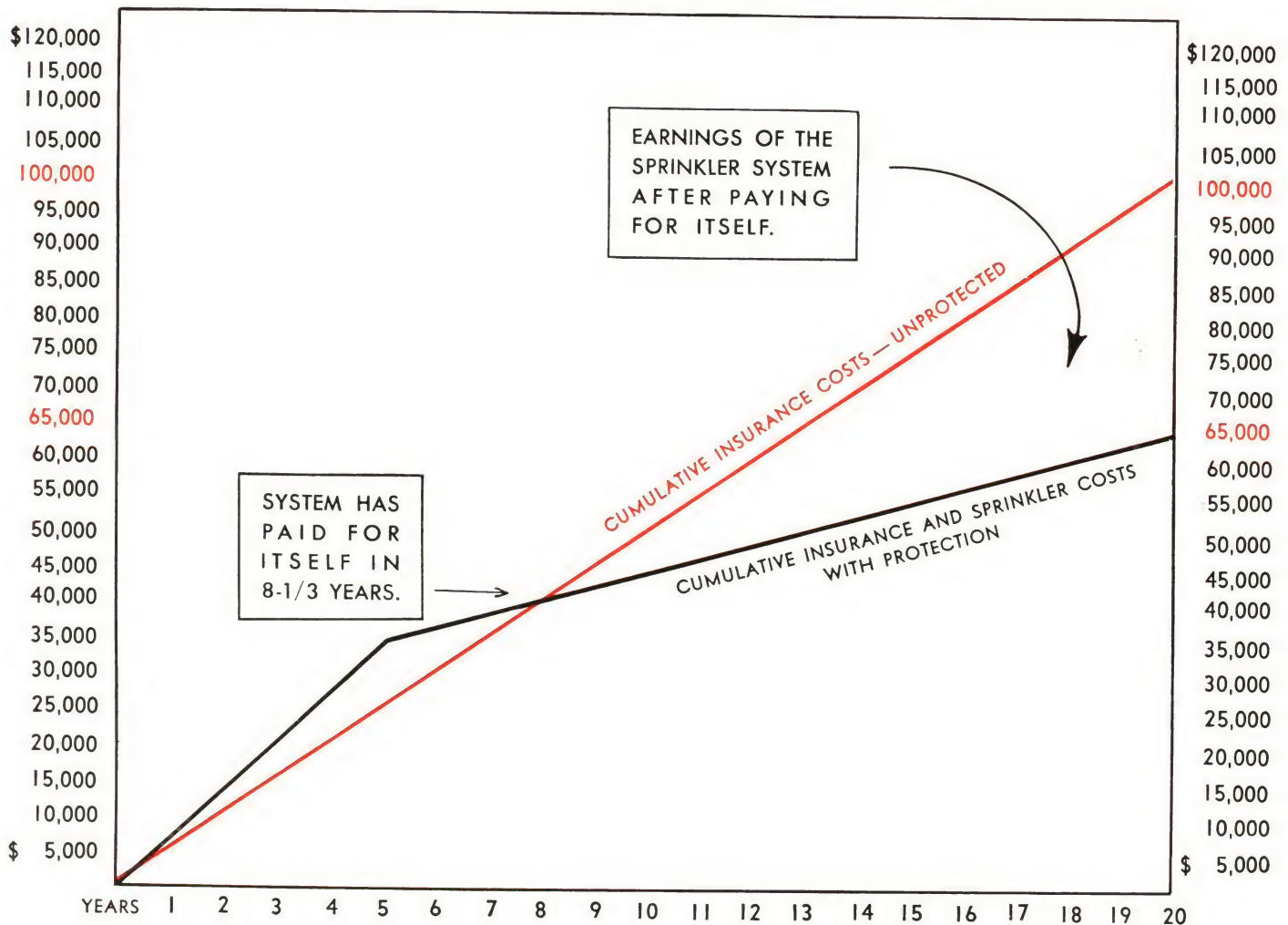
Note: In some instances savings are sufficient to equal entire cost.



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# GRAPHIC ANALYSIS *of* INSURANCE SAVINGS



*Above* is a graphic chart illustrating the Insurance Savings Table shown on the preceding page. The insurance premium on the unprotected property in this particular instance is \$5,000 per year. With the installation of a Grinnell Automatic Sprinkler System, the premium is reduced to \$2,000 per year, resulting in an annual saving of \$3,000 in insurance.

On this basis, the system will pay for itself in eight and one-third years. From that time on, the

system saves or earns \$3,000 each year. And, during the 20 years from the day the system was installed, it has not only constantly safeguarded the business against loss from fire, but has earned the substantial sum of \$35,000 for the owner.

Although this illustration covers a period of 20 years only, the equipment, with proper care, continues to protect the business from fire and assures insurance savings during the entire life of the property.



# A FOOL-PROOF SPRINKLER SYSTEM

*is never an* ACCIDENT!

IT MUST BE PROPERLY PLANNED, PROPERLY INSTALLED

*and it must* FUNCTION

**A** MAKESHIFT sprinkler system installation might fail at the all important moment. To be thoroughly dependable a sprinkler system must be properly planned to reach every square foot of a building. Extra coverage is sometimes advisable for the more hazardous areas. Each sprinkler head must receive an ample supply of water the instant it is needed. The system must be fool-proof.

A Grinnell Automatic Sprinkler System includes the famous Grinnell Sprinkler Heads, Fittings (cast

iron screwed, long turn and flanged), Dry-Pipe Valves and other special devices—all manufactured and tested in strict accordance with standards set by insurance authorities.

Soundly engineered and skillfully installed a Grinnell Automatic Sprinkler System is always adequate to do its job completely—to meet the strictest insurance standards and requirements—

AND IT COSTS NO MORE.



GRINNELL

*Now . . . before fire strikes . . . decide  
on the Grinnell Sprinkler System best  
suited to your plant.*





# GRINNELL'S **7** STANDARDS *of* SUPERIORITY *show why Executives* *prefer* GRINNELL FIRE PROTECTION

**G**RINNELL'S 7 STANDARDS of Superiority are responsible for the unfailing protection afforded by a Grinnell Automatic Sprinkler System year after year. These 7 Standards are your assurance of the most positive fire protection available. They represent the combined experience of the organization which has been responsible for safeguarding over 50 billion dollars worth of property.

## **/** SCIENTIFIC RESEARCH

*... Since 1882*

**I**N LABORATORIES specially designed for the purpose, Grinnell Engineers have developed and are constantly testing every device which makes up a Grinnell Automatic Sprinkler System.

This intelligent research has been responsible for the major part of all improvements in automatic sprinkler fire protection.





## 2 GRINNELL ENGINEERING . . .

*that "tailors" the System to the Building*



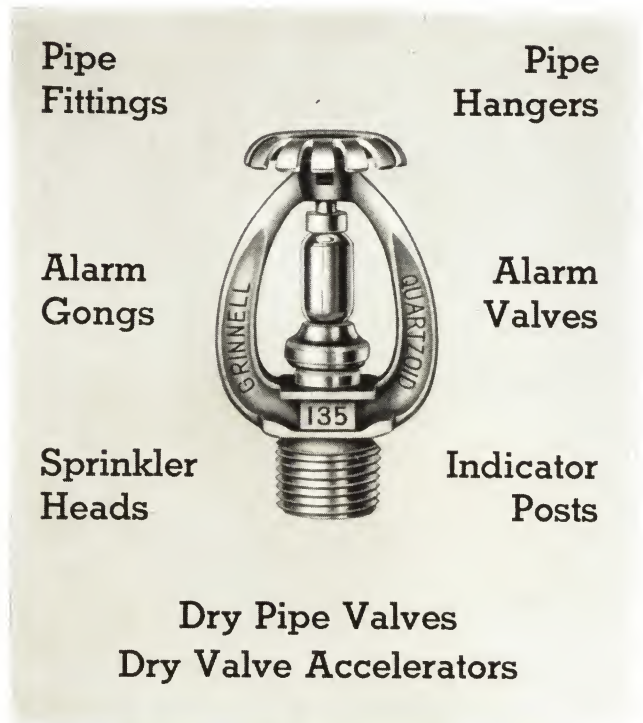
**E**VERY Grinnell installation is "tailored" to fit. A survey of the property is made; use and occupancy requirements are considered. Then the proper type of system is decided upon. It may be the standard Grinnell "Wet-Pipe" System, the "Dry-Pipe" System, or a combination of both. If appearance is paramount, the piping may be concealed as shown at the left. Sprinkler piping may be painted to blend with the color scheme or concealed inconspicuously in the ceiling or side wall trim.

After Grinnell engineers have drawn the plans in strict accordance with the rules and regulations of the Insurance Underwriters, the plans are sent to the nearest Grinnell factory where the pipe is cut and threaded to measurement and the system prefabricated as far as possible. The material is then assembled, carefully bundled and marked for easy distribution. This assures maximum speed of installation—with a minimum of interference to others on the job.

## 3 WIDE RANGE OF GRINNELL EQUIPMENT

**T**HE component parts of the Grinnell Sprinkler System with the exception of pipe, are manufactured in Grinnell plants . . . under careful and expert supervision. Responsibility for the whole installation is thus centralized, and a Grinnell system is a manufactured unit rather than an assembly of various parts from different sources. This is a factor of utmost importance to any prospective purchaser of fire protection equipment. Complete stocks carried at all plants eliminate delays and assure fast and uninterrupted installation.

Every type of automatic sprinkler system is available through Grinnell. Each installation is engineered to meet specific conditions. A Grinnell engineered installation can be made in every case without resort to makeshifts or untried adaptations.





# 4 HIGH QUALITY of

## GRINNELL PRODUCTS

**S**OUND business judgment dictates that the best interests of the owner of a Grinnell equipment are paramount. By maintaining the high quality of its products, Grinnell Company consistently serves the customer's best interests and, at the same time, safeguards its own. As all systems are installed by Grinnell installation crews, a sacrifice in quality means an increase in erection costs and service demands—as well as a loss of customer goodwill.

All Grinnell materials are approved by the Underwriters' Laboratories and the Associated Factory Mutual Laboratories. They are under the continuous supervision not only of these Laboratories but of the Grinnell Product Testing Laboratory as well. All installation work is performed in accordance with the rules and regulations of the Insurance Companies and subject to the bureau having jurisdiction.



## 5 GRINNELL INSTALLATION

*... without Interrupting Normal Routine*

**G**RINNELL Automatic Sprinkler Systems are installed by Grinnell's own seasoned construction force—with its expert knowledge of what to do and how to do it.

"Tailored to fit" Systems, factory made to blueprint as far as possible, eliminate delays and facilitate erection with clock-like precision on the premises. Efficiency and neatness govern each operation and the greatest care is exercised to avoid disturbing personnel or normal routine within the building.

Our files contain many unsolicited complimentary letters received from owners of all types of property—expressing their admiration of this trouble-free installation service. One of these letters, from a hospital, is reproduced at the right. It is typical of many others from owners in various fields. The fact that Grinnell installation men can so expertly erect equipment where the ill and convalescent demand quiet and rest is evidence of its ability to perform this service in any type of occupancy.

### The Lancaster General Hospital

528 N. LIME ST.

LANCASTER, PENNA.

MEMBER AMERICAN HOSPITAL ASSOCIATION  
AND  
LANCASTER COMMUNITY CHEST

B. FRANK SHAEVELY, PRESIDENT  
FRANK K. SEVER, V-PRES  
HAROLD ADAMS, SECRETARY  
GEORGE M. ARISHMAN, TREASURER  
FRED S. PIPER, ASST. TREAS.  
RAY B. HALL, MANAGER

August 3, 1936

The Grinnell Company,  
Erie & D Sts.  
Philadelphia, Pa.

Gentlemen:

Attention - Mr. Ryan

It would hardly be fair for this hospital to overlook writing you a letter relative to the installation of your Sprinkler System.

When the question arose regarding the installation of a Sprinkler System, there was considerable discussion among the professional staff as to the annoyance to patients during the installation. This matter was discussed pro and con, and finally the Board approved the purchase of your system.

The installation is now complete and as Manager of the institution, and as one who has been present during the entire installation, I am privileged to speak frankly relative to the efficiency of Mr. O. J. Mooney, foreman of the installation crew. These men worked quickly and courteously under Mr. Mooney's direction. With the exception of a little dust, which we very quickly cared for, and a slight bit of noise which could not possibly be eliminated, this installation annoyed no one to any great extent, and we feel that our patients did not suffer to any degree while these men were working.

Naturally a hospital installation is one which would bring forth some comment as to noise and disturbance to patients but your company has trained its foreman and crew to such a degree of courtesy and efficiency that this hospital will highly recommend the work done by your organization in installing your system in other institutions.

Very truly yours,

THE LANCASTER GENERAL HOSPITAL

RBB/n

Ray B. Hall.  
Manager



## 6 GRINNELL RESPONSIBILITY...

*Protecting over 50 billion dollars' worth of property*



**W**HEN human life and valuable property are at stake, it does not pay to gamble on makeshift fire protection equipment.

Behind every Grinnell Automatic Sprinkler System stand the integrity and responsibility of Grinnell Company, Inc., which has maintained a position of leadership in the field of automatic fire protection for over fifty years.

Grinnell Automatic Sprinkler Systems are installed in industrial, commercial and institutional buildings throughout the world. More than half of the automatic sprinklers in use today are Grinnell Sprinklers. Their task is to protect millions of lives and over 50 billion dollars' worth of property from fire.

## 7 GRINNELL CONTINENT-WIDE SERVICE... *Covering United States and Canada*

**R**EALIZING its responsibility, Grinnell has sought, through the years, to make available a service to its customers as nearly continent-wide as possible by maintaining offices, general foremen or inspectors in all of the principal cities of the United States and Canada. These links in the Grinnell chain of service make it possible to obtain personal assistance, service and information from thoroughly competent sources in safeguarding life and property from the ravages of fire.

### WORLD-WIDE SERVICE

Associated with Grinnell in this work of fire protection are Mather & Platt of Manchester, England, who carry the Grinnell name and tradition around the world.





# THE CRITICAL PERIOD

## IN FIRE PROTECTION . . .

### *The First Few Minutes*

**T**HESE few minutes at the start of a fire are worth hours of fire fighting later. What happens during this critical period often determines the safety of human life . . . the fate of a business.

These first few minutes determine whether a successful enterprise will continue its uninterrupted progress or be seriously crippled, perhaps destroyed entirely, by fire.

#### WITH A GRINNELL AUTOMATIC SPRINKLER SYSTEM . . .

*When the fire starts the water starts—and the fire is extinguished. Simultaneously an alarm is sounded inside and outside the building. Since the fire is quickly extinguished, the water is turned off only long enough to replace the opened sprinkler head or heads . . . and the system is on guard again.*



#### TYPES . . .

### *of Grinnell Sprinkler Systems*

There is a type of Grinnell Sprinkler System for every fire hazard. Each is designed to provide the utmost in adequate fire protection for specific conditions.

These Systems, briefly described on the following pages, are—

- 1 • The Grinnell Standard Wet-Pipe System
- 2 • The Grinnell Standard Dry-Pipe System
- 3 • The Grinnell Simplex Dry-Pipe System
- 4 • The Grinnell Mulsifyre System
- 5 • The Grinnell Open Sprinkler System



# THE GRINNELL

## STANDARD *Wet-Pipe* SYSTEM

FOR USE WHERE TEMPERATURES *Above* FREEZING ARE MAINTAINED

**T**HE Grinnell Wet-Pipe System consists of Grinnell Automatic Sprinkler Heads mounted at proper intervals on a system of piping suspended from the ceiling. These sprinkler heads are manufactured to operate at predetermined temperatures, dependent upon the normal temperatures in the area in which they are installed. The piping system is filled with water and is graded in size to assure adequate water pressure to safeguard the protected areas. It is connected to the main water supply by means of valves, alarms and other devices so that constant water pressure is maintained against the closed sprinklers.

When a fire occurs, the heat generated ascends—causes the sprinkler head above to open—releasing water upon the fire, quickly extinguishing it. If necessary, the next sprinkler takes care of its allotted area in the same manner. Only the sprinkler heads in the immediate vicinity of the fire operate . . . thus reducing water damage to an absolute minimum. Simultaneously, with the opening of a single sprinkler, an alarm is sounded both inside and outside the building. A shut-off valve, plainly marked in a conspicuous place, makes it possible to shut off the water as soon as the fire is out. The heads which have operated may then be replaced: the system is again on guard.



An "exposed" Grinnell Automatic Sprinkler System protects this large warehouse from fire.



# THE GRINNELL

## STANDARD *Dry-Pipe* SYSTEM

FOR USE WHERE TEMPERATURES MAY GO *Below* FREEZING

**I**N unheated buildings—or in unheated sections such as shipping platforms—the water in a wet-pipe sprinkler system might freeze in winter and defeat the working of the system. The Grinnell Dry-Pipe Sprinkler System overcomes this difficulty: the piping system, instead of being filled with water, is filled with air under moderate pressure, with ample water instantly available (from the outside water supply) upon operation of the Dry-Pipe Valve.

The Dry-Pipe Valve is closed under ordinary con-

ditions but, when a fire occurs, the sprinkler head operates just as in the Wet-Pipe System. The opening of a sprinkler head allows the compressed air in the pipes to escape. This releases the pressure in the Dry-Pipe Valve so that it swings open and permits the water to flow to the opened head. This function is speeded by the Grinnell Dry Valve Accelerator. From this point on, the working of this system is exactly the same as in the Wet-Pipe System—the fire being checked in its earliest stage.



A "concealed" Grinnell Automatic Sprinkler System (Side Wall) safeguards this summer hotel.



# THE GRINNELL

## *Simplex* DRY-PIPE SYSTEM

FOR USE WHERE HAZARDS ARE NOT TOO SERIOUS

AND LIMITED WATER SUPPLY IS AVAILABLE

**T**HE Grinnell Simplex Dry-Pipe System was designed to extend the benefits of automatic sprinkler protection to properties where fire hazards are relatively light and where water supplies are limited. Standard sprinkler systems, as a general rule, require a water supply that can be satisfactorily furnished through pipe not less than 6 inches in diameter. The Grinnell Simplex System, however, needs only a  $\frac{3}{4}$ -inch tank filling connection which may come from the usual domestic supply.

The successful operation of the system is based on the fact that a very large percentage of fires in sprinklered buildings are extinguished with a few heads. To accomplish its purpose, the Grinnell Simplex System utilizes a pressure tank of sufficient capacity in which water and air are carried under

suitable pressure to meet conditions of the particular installation.

The first basic factor contributing to the success of this type of system is the GRINNELL QUARTZOID BULB HEAD. The low operating temperature and extreme sensitivity of this Head endow the system with the rapid response essential to the control of fires with limited water supplies.

The second basic factor is the absence of mechanical moving parts. This absence makes for trouble-free operation. The result is a system in which efficiency is at the maximum . . . and maintenance at the minimum.

Grinnell Simplex Sprinkler Systems are installed in many clubs, schools and sanatoriums where hazards are light. Grinnell Simplex Marine Systems are installed on passenger ships.



*This large Country Club is protected against fire by a Grinnell Simplex Dry-Pipe System.*



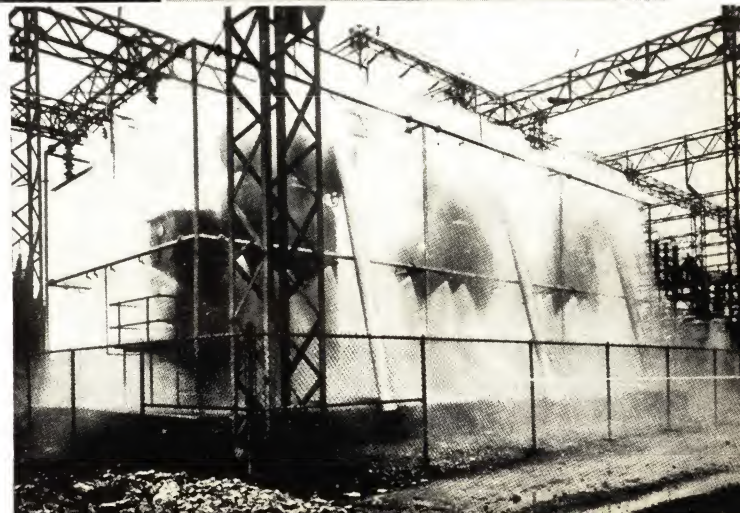
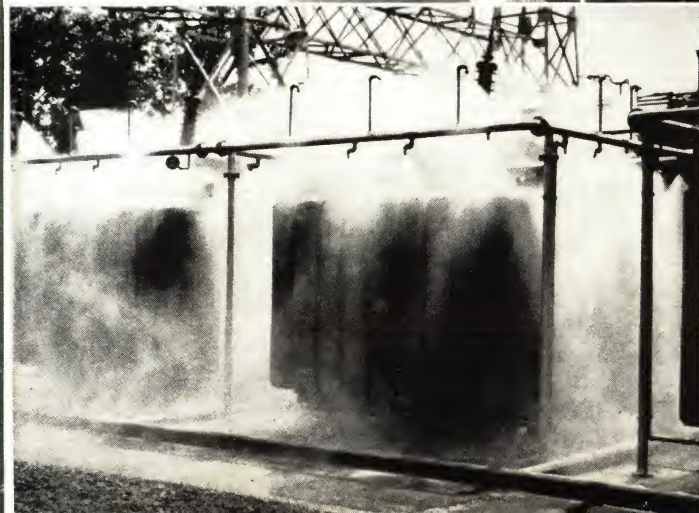
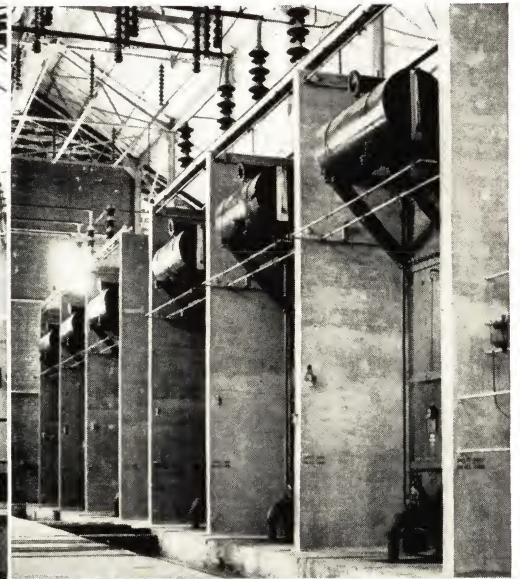
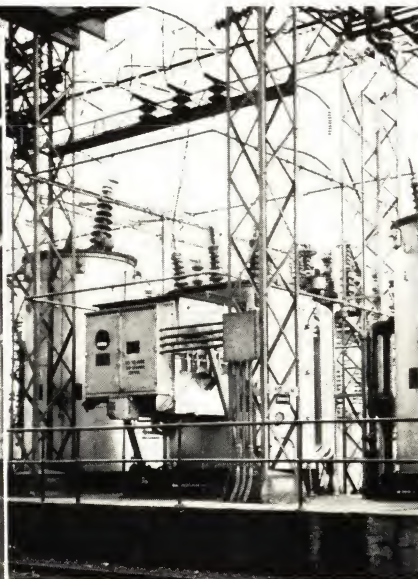
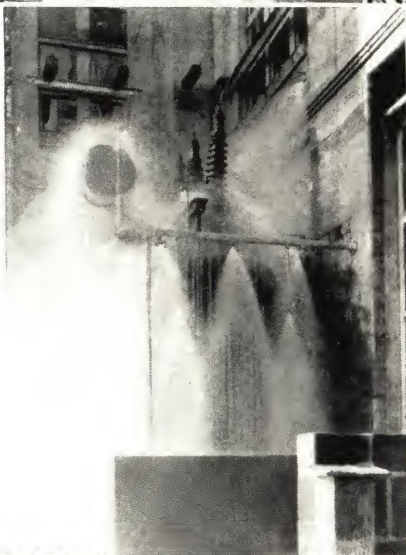
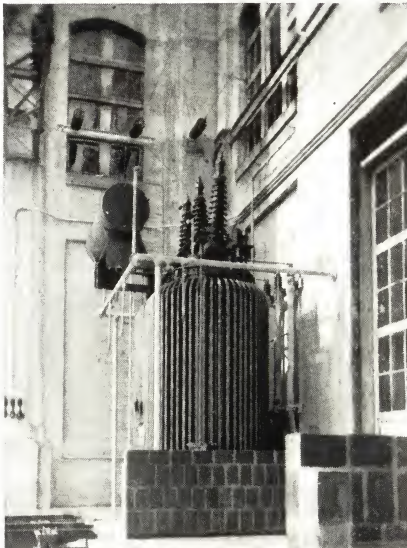
# THE GRINNELL *Mulsifyre* SYSTEM

## FOR EXTINGUISHING FIRES IN INFLAMMABLE LIQUIDS

**T**HE Mulsifyre System has had wide acceptance in this country and abroad in the Public Utility Field for the purpose of extinguishing oil fires in transformer stations for circuit breakers and other places where an oil fire may be a serious hazard, such as the lubricating oil lines to generators. Its effectiveness in extinguishing fires in inflammable liquids offers broad possibilities in other fields. It has been approved for use in the bilges of oil burning ships of the United States Navy.

The Grinnell Mulsifyre System of extinguishing oil fires operates on an entirely new and sound basis. A specially designed Projector discharges water, with considerable force, directly upon the burning liquid and converts it into an emulsion which is incapable of burning. The formation of the emulsion is almost instantaneous and the fire is extinguished within a few seconds from the time the water is released — after this, the emulsion breaks down.

Mulsifyre Projectors are attached to a permanent piping system and are spaced a few feet apart so that they command the entire inflammable area beneath. This System may be installed to operate manually or automatically.





# THE GRINNELL AUTOMATIC SPRINKLER HEADS . . . *the Nerves of the System*

**W**HILE successful performance of an automatic sprinkler system is impossible unless all the parts of the system function properly, the first effect of a fire is to raise the temperature in the vicinity of the sprinklers to their operating point, and, if they fail to open completely, failure of the entire system follows. Consequently, Grinnell has devoted its best efforts—in research, engineering, manufacture—to the perfection of the sprinkler itself.

The success of a sprinkler depends mainly upon its speed of opening, its durability in service, and the manner in which it applies water to a fire.

The *speed* with which a sprinkler opens is important, for the sooner water reaches a fire the sooner it will be extinguished with consequent smaller loss.

*Durability* is important because it determines the useful life of a sprinkler in the presence of corrosive agents. These agents . . . always to be found in the atmosphere . . . tend in some instances to decrease speed and in others to weaken the sprinkler. The better the sprinkler in this respect the greater its value as a fire protection agent and as an investment—for replacement is required by insurance interests when performance falls below the required standard.

*Distribution* is important because after the sprinkler opens the water should be discharged over a definite floor area, ceiling or wall and *in the form of small fast driven drops*, most effective as a cooling and extinguishing means. Water not reaching a fire is worse than wasted since it may cause needless damage.

## THE GRINNELL *Quartzoid Bulb* TYPE

THE MOST ADVANCED DEVELOPMENT IN SPRINKLERS

TODAY . . . STANDARD WITH MANY NATIONAL USERS



**T**HIS sprinkler is the most advanced development. Because it far outclasses any other in speed and durability, it is standard with many national users. The operating element is a bulb made from quartzoid, a strong transparent material entirely unaffected by all forms of corrosion, nearly filled with a colored liquid. On being heated by fire, the liquid rapidly expands and promptly bursts the bulb, opening the sprinkler in a forceful positive manner not obtainable in any other type. Speed of operation is greater because opening occurs at a lower temperature than is possible and safe with other types of sprinklers since the Quartzoid Bulb does not weaken as its bursting point is approached.

The standard rating is 135° F., and bulb sprinklers of this rating are approved for use under exactly the same conditions as the ordinary type having a rating of 165° F. Exceptionally good distribution is obtained by the streamlined deflector, against which the water strikes after being discharged at high velocity from a smooth tapered nozzle.

The Quartzoid Bulb Sprinkler is attractive in appearance, and is favored for some installations on that account. It can be supplied with the metal parts plated, polished, colored or wax-coated for decoration or protection.



## THE GRINNELL *Side Wall* TYPE



**T**HE Grinnell Side Wall Sprinkler Head is identical in construction with the Grinnell Quartzoid Bulb Type with the exception of its specially designed deflector.

This Sprinkler Head was devised to provide automatic sprinkler protection in occupancies where light or medium hazards exist and where appearance of overhead piping is objectionable. It can be inconspicuously installed on side walls so that when opened by fire, the specially designed deflector effectively distributes water over a predetermined area from the wall to the center of the room.

The Side Wall Sprinkler is recommended for lobbies, rooms with overhanging balconies, steamship salons—and other locations where the total area to be protected is not too great or where it is desirable to make the installation harmonize with the decorative scheme.

## THE GRINNELL *DuraSpeed* SOLDER TYPE

### THE GRINNELL CONVECTOR TYPE SPRINKLER HEAD

**W**HILE conventional in design to the extent that it employs a soldered joint for the operating element and has the usual temperature rating, this sprinkler is superior in speed, durability and distribution to others of this type because of new and distinctive features of design.

The DuraSpeed excels in *speed* because of the heat collector which is a perforated extension of one of the soldered surfaces. This patented feature, present in no other sprinkler, increases speed of operation by gathering heat that would otherwise be wasted and conducting it to the soldered joint, hastening fusion and opening of the sprinkler.

*Durability* is assured by the fact that none of the solder is exposed to the attack of corrosive agents, but is protected by a ring of wax. Even in the event of the failure of the wax, the progress of corrosion would be slow because the amount of solder exposed is small, due to the hemispherical form of the soldered joint. The opening force of this sprinkler is derived from a phosphor bronze spring hook which insures sharp forceful operation, unusual in solder type sprinklers.

This sprinkler can be furnished wax-coated and plated for further protection against corrosion.





# GRINNELL FIRE PROTECTION *Specialties*

TO SUPPLEMENT AUTOMATIC SPRINKLER EQUIPMENT

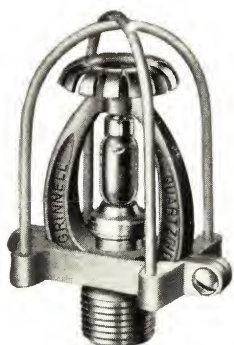


## *Ornamented Type Sprinkler*

The Grinnell Ornamented Type Sprinkler is designed for use in hotels, clubs, stores, offices and other places where appearance is paramount. The sprinkler piping is therefore concealed above the ceiling. The head is installed in a pendent position with the escutcheon plate flush against the ceiling surface.

This sprinkler is the standard Grinnell Quartzoid Bulb Type with ornamentation affixed after the head is in place.

The smooth, streamlined deflector of all Grinnell Sprinklers is so designed that it changes the direction of the water issuing from the discharge nozzle and distributes it over the area protected by the sprinkler . . . without unnecessary loss of energy or velocity.



## *Sprinkler Guard*

When sprinklers are installed in factories, warehouses and stock rooms where the work carried on or the material being handled exposes them to the danger of being struck by heavy objects, they can be protected against accidental damage by Grinnell Sprinkler Guards.

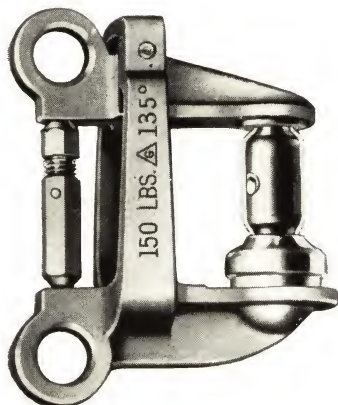
These Guards are designed to withstand heavy shocks and blows, yet do not detract from the appearance. They are available for all types of Sprinklers including upright, pendent and side wall. Sprinkler Guards installed in hazardous places may be the means of saving many times their cost. A Grinnell Engineer will be glad to make a survey to determine the advisability of using sprinkler guards.



## *Fusible Links* • SOLDER TYPE

Grinnell Fusible Links are made of three interlocking bronze plates. All surfaces are covered with solder when assembled. Soldered areas are so stiffened that any weakening of this portion of the link due to twisting or bending is practically eliminated. This feature is distinctive and characteristic of the Grinnell Fusible Link.

These Links are listed as standard by the Underwriters' Laboratories and Factory Mutual Laboratories. Type A (illustrated), for loads not exceeding 20 pounds, is used for automatic release of fire doors, windows, etc., normally held open with counterweight and cable mechanism. Type B (smaller), for loads not exceeding 3 pounds, is used for controlling small trapdoors, windows and other automatic control equipment.



## *Quartzoid Bulb Link*

The Grinnell Quartzoid Bulb Link fills a definite need in the fire protection field for a heat-operated releasing device that will hold heavy loads in a dependable manner.

This Link, with its Underwriters and Factory Mutual Approved load rating of 150 pounds, eliminates the necessity of bunching several 20-pound solder links to carry the same heavy load which now one Quartzoid Bulb Link can carry.

The bulb is the same as used in the Grinnell Quartzoid Sprinkler, and is without equal for its combination of extreme sensitivity and immunity to corrosion. It also has the added advantage of a wider range of temperature ratings than is available in any other type of link.



# THE GRINNELL SYSTEM

## OF *Open* SPRINKLERS

FOR THE PROTECTION OF VULNERABLE

EXTERIORS FROM EXPOSURE FIRES

**W**HILE Grinnell Standard Sprinkler Systems insure complete protection from a fire which occurs within a building, the Grinnell Open Sprinkler System affords a means of protecting the exterior of a building menaced by fire spreading from neighboring property.



*Grinnell Window Sprinkler*

This System consists of piping carried to the outside of the building to which open sprinklers are attached. The piping is "dry"—the water, held in check

by manually operated control valves inside the building, may be turned on when required. A separate valve controls the water supply for each side of the building. Automatic Sprinklers are not used in this System because a fire spreading from a building close by might cause considerable damage to the protected property before the generated heat was sufficient to operate automatic sprinkler heads exposed to the cool open air.

When a fire menaces the exterior of the protected property, the control valve supplying water to the open sprinklers on the exposed side is turned on: water, under pressure, rushes to the open sprinklers. This solid stream of water is immediately transformed into a WATER CURTAIN which covers the exposed wall and all its openings.

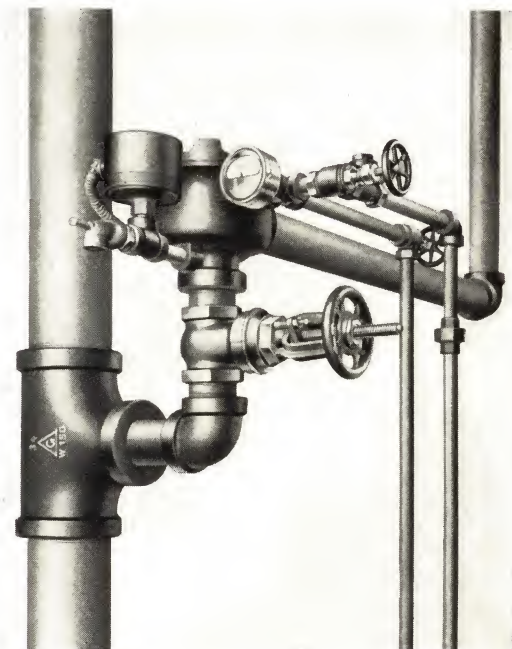
## THE GRINNELL *Cold Weather* VALVE

FOR ECONOMICAL FIRE PROTECTION OF SMALL UNHEATED PORTIONS

WHICH OTHERWISE WOULD BE UNPROTECTED IN WINTER

**Q**UITE frequently, wet-pipe automatic sprinkler systems extend into sheds, shipping platforms and other small areas which are unheated. During the winter months, the water to this exposed piping must be turned off and the piping drained to prevent freezing. This procedure immediately deprives the area of automatic fire protection and creates a fire hazard which seriously endangers the remainder of the premises.

To correct this condition, Grinnell Company, at the suggestion of the insurance companies, developed the Cold Weather Valve. The use of this Valve converts the section of the wet-pipe automatic sprinkler system in the unheated area into a dry-pipe automatic sprinkler system: the pipes are filled with air under moderate pressure and the water is held in check by the Valve. Should a fire occur in the area, the opening of the sprinkler head allows the compressed air to escape, the Cold Weather Valve opens—and water flows into the system. From this point on, the equipment functions as a wet-pipe system and the fire is checked in its earliest stage. Thus the entire building, including its unheated areas, is fully protected against fire throughout the entire year.





# *To Keep Fire Protection Equipment at Peak Efficiency*

## THE GRINNELL *Inspection* SERVICE

**T**HIS SERVICE was established in 1918. Trained Grinnell Engineers make periodic inspections and tests of a sprinkler system to assure peak efficiency. A large number of Grinnell Automatic Sprinkler System owners use this service and their expressions of satisfaction indicate it is well worth the small annual charge. Among the many desirable features of this Service are:

### PROMPT DISCOVERY OF CONDITIONS NEEDING ATTENTION

The economical maintenance of a sprinkler system depends upon the prompt discovery of conditions which, if passed unnoticed, might render the equipment partially or wholly ineffective. The Grinnell Inspector periodically examines and tests every part of the sprinkler equipment. Thus conditions requiring attention are promptly discovered and corrected.

### ELIMINATION OF CONDITIONS IMPAIRING PROTECTION

The Grinnell Inspector checks many details which

might be overlooked by employees—details such as obstruction to distribution of water . . . inefficient drainage of piping in dry systems . . . neglect to change sprinklers where temperatures are influenced by the installation of heating units . . . large lamps, etc. . . closed or partly closed gate valves . . . unsatisfactory water supply . . . danger of freezing—and many other causes which might impair the efficiency of the system in event of fire. The required trip test of dry-pipe valves is made in connection with the insurance interests if desired. The Grinnell Inspector then resets the valve, thoroughly cleans it inside, placing the system in first-class condition.

### REPLACEMENT OF SMALL PARTS AND MINOR REPAIRS

Carrying a small tool kit and a limited supply of replacement parts, the inspector is able to perform minor repairs and furnish such parts as he has . . . promptly and, in most cases, without cost to the owner.





# *For Automatic Supervision of Sprinkler Systems . . .*

## CENTRAL STATION

## *Supervisory* SERVICE

**A**NY mechanical system, without constant supervision as well as periodic inspections, is at the mercy of human carelessness, forgetfulness and neglect. The Grinnell Company, through A.D.T. Central Stations in all of the principal cities throughout the country, is able to arrange for an electrical supervisory service which automatically detects trouble conditions that might impair the effectiveness of the sprinkler system.

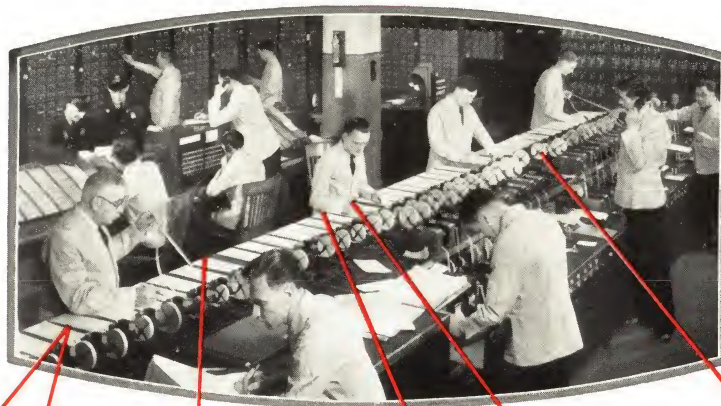
### HOW CENTRAL STATION SUPERVISORY SERVICE OPERATES

By means of electrical devices attached to all vital parts of the sprinkler system, trouble conditions—such as closed shut-off valves, low water in gravity or pressure tanks, low air pressure or low temperature—are automatically detected when they occur. These conditions are automatically reported to an outside Central Station where trained operators are

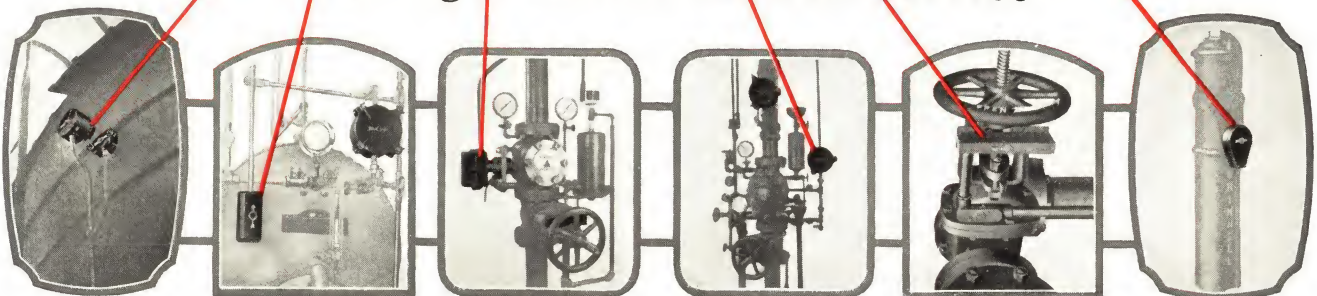
continuously on duty to investigate and secure immediate corrective action. This Sprinkler Supervisory Service also makes the sprinkler system an automatic fire alarm: it automatically summons the fire department when water flows in the system through the opening of a sprinkler head—or when an accident occurs to impair the system.

### ADVANTAGES OF CENTRAL STATION SUPERVISION

In addition to assuring complete and constant operating efficiency of the sprinkler system, Central Station Supervisory Service in many cases results in actual economies through modifications of other more costly and less effective protective measures. In some instances, savings in insurance also may be obtained. Engineers are available at any time and will gladly make surveys and submit estimates . . . without cost or obligation.



Complete Protection  
Through Central Station Service







*Above:* This large Storehouse in Boston is fully protected by Grinnell Automatic Sprinklers.

*Left:* Grinnell Automatic Sprinklers safeguard this Railroad Elevator in New Orleans.

## GRINNELL SPRINKLER SYSTEMS

### *Installed in Buildings of All Types*

*Right:* Two-story Railroad Pier in Baltimore where 4000 Grinnell Quartzoid Bulb Sprinklers and 300 Grinnell Open Sprinklers are always on guard against fire.



*Right:* Milwaukee County Infirmary where Grinnell Sprinklers have banished the danger of fire.



*Below:* Grinnell Sprinklers prevent business interruption in this New York Department Store.



*Left:* Guests patronize this fire-safe Miami Hotel protected by Grinnell.





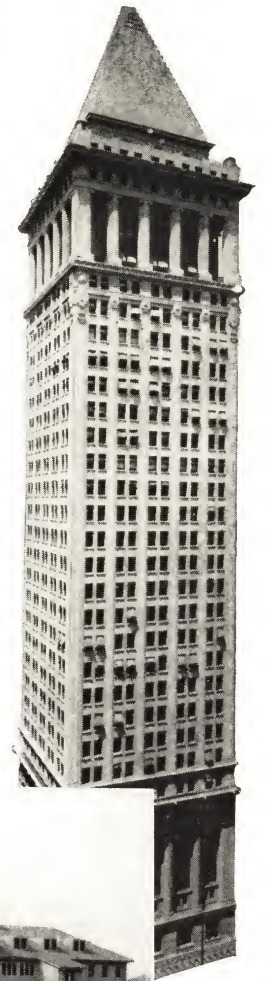
# *Protected Year After Year by* GRINNELL SPRINKLER SYSTEMS

*A Few Typical Installations Showing the  
Wide Adaptability of Grinnell Equipment*

*Left: A large Can Manufacturing Plant in Vancouver which Grinnell Sprinklers have made safe from fire.*

*Right: This New York Bank in the skyscraper district is protected by a Grinnell Sprinkler equipment.*

*Below: Dairy Farm building in Atlanta immune from fire because of Grinnell Sprinklers.*



*Center: Country Clubs are often distant from City Fire Apparatus. This Ohio Clubhouse is protected by a Grinnell System.*

*Below: Five school fires in the U. S. each day do not bother this Grinnell protected School in New Orleans.*



*Below Right: This spacious Hotel and its guests are protected from fire by Grinnell Side Wall Sprinklers.*

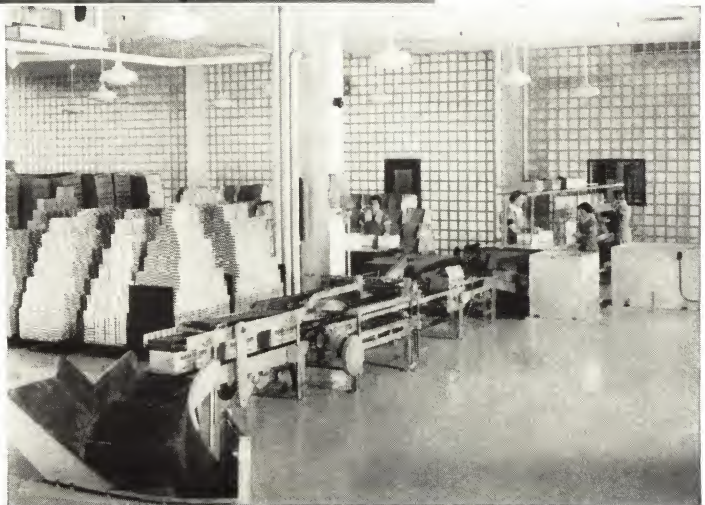
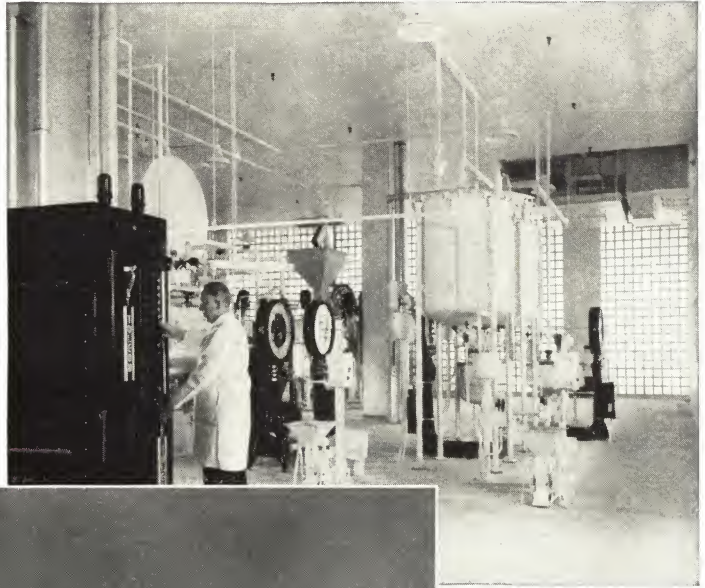




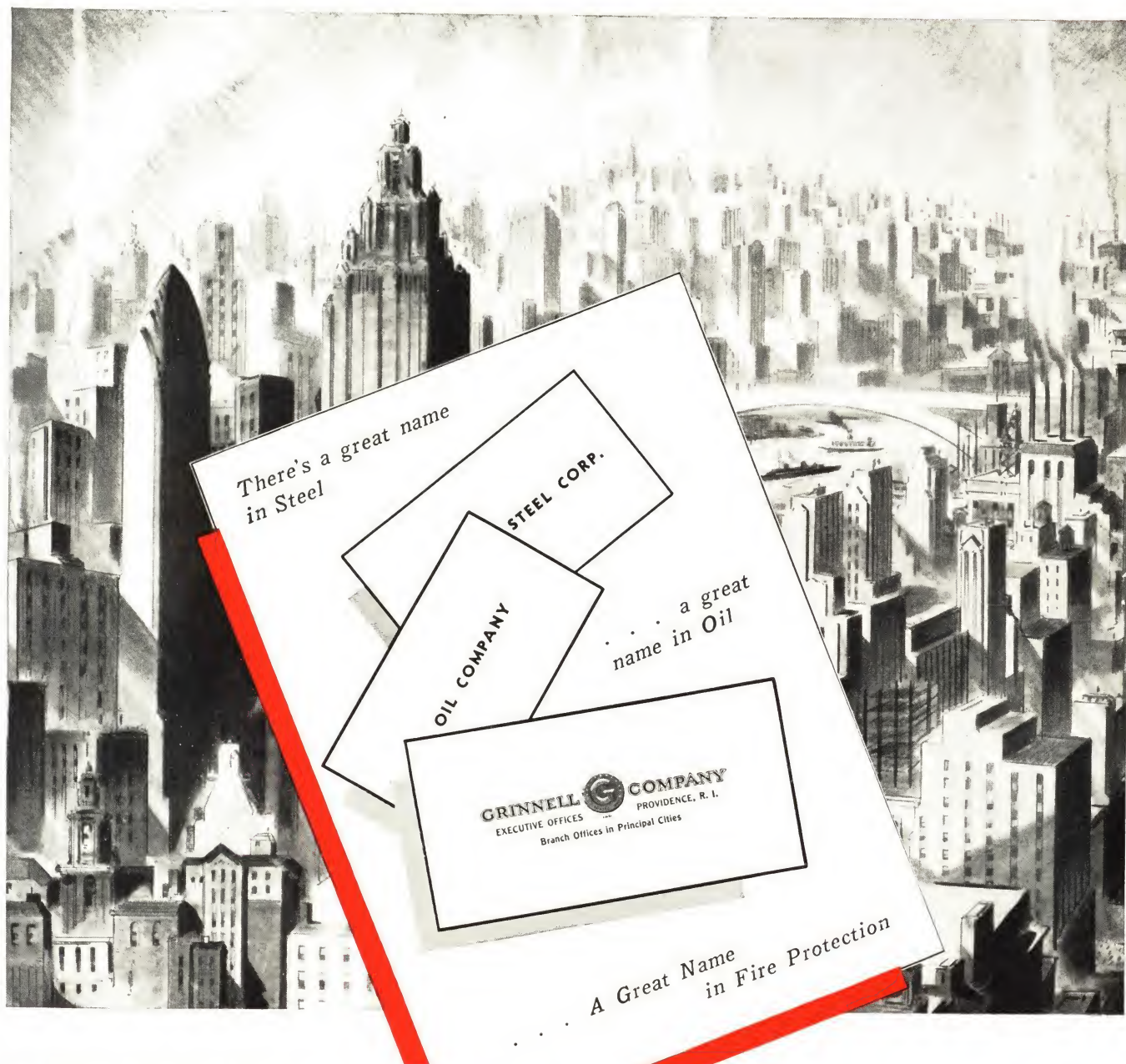
A *Recent* GRINNELL INSTALLATION  
IN THE NEW

*Campana Building*

BATAVIA, ILLINOIS







**E**IGHT THOUSAND FIRES put themselves out in this city since 1930. Larger than London, twice the size of New York, it is *Fireless City* . . . the huge metropolis of factories, skyscrapers, stores, of hospitals and schools, homes, ships, docks and piers—all equipped with Grinnell Automatic Sprinkler Fire Protection. *Its property value exceeds fifty billion dollars.*

With Grinnell protection, fires put themselves out *before* the danger stage. Acting automatically, the Grinnell System stops fire at its source.

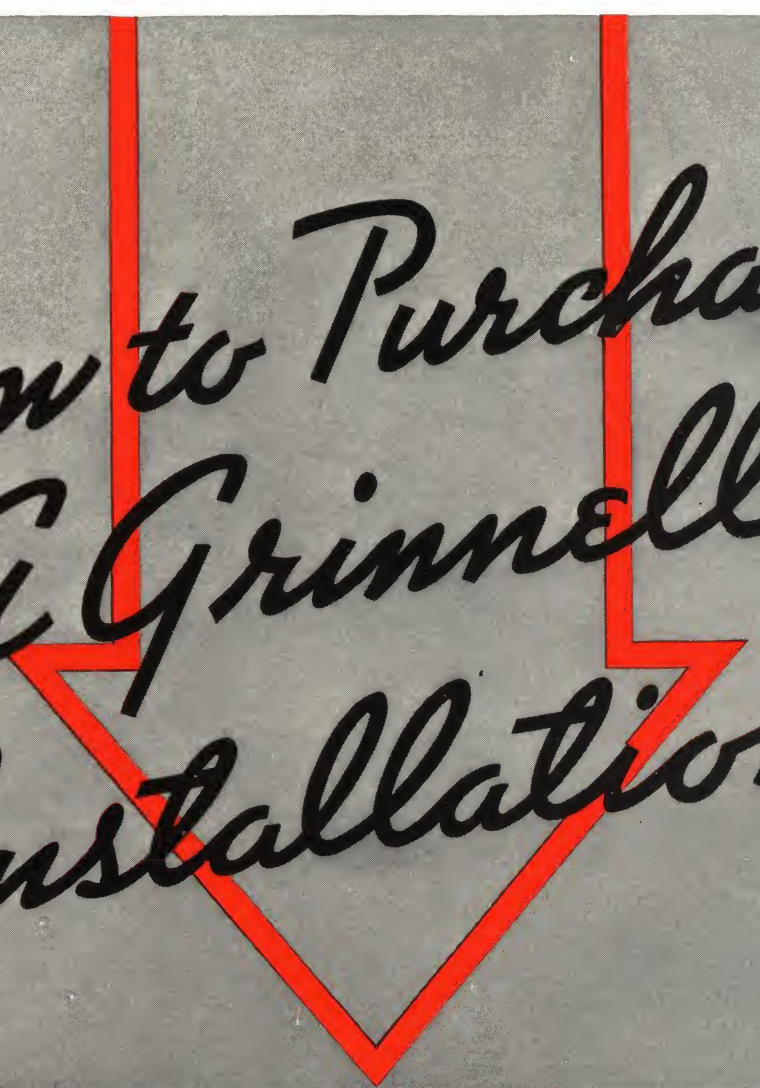
In the automatic sprinkler industry, GRINNELL is the standard. Due to its introduction of the first

self-operating sprinkler head in 1882 and its continual research and development ever since, it has kept ahead of fast-multiplying fire hazards.

It is easy to move your property to Fireless City . . . to let an everwatchful Grinnell System guard it against fire . . . to reduce your insurance premiums. Write for full information and a check-up of your building by Grinnell Engineers.

**GRINNELL**  
AUTOMATIC SPRINKLER FIRE PROTECTION





# How to Purchase A Grinnell Installation

*It is not necessary* TO PAY CASH FOR A GRINNELL SPRINKLER SYSTEM — ALTHOUGH INSURANCE SAVINGS OFTEN MAKE IT QUITE CONVENIENT TO DO SO.

●

A GRINNELL ENGINEER WILL BE GLAD TO DISCUSS A FINANCE PLAN WHEREBY PAYMENTS ARE EXTENDED FOR LENGTHY PERIODS . . . ON REASONABLE TERMS.

●



*You are invited to discuss your*



**FIRE PROTECTION PROBLEMS**  
*with a GRINNELL ENGINEER*

*... and there's a GRINNELL  
OFFICE as near as your Telephone*

## **GRINNELL COMPANY, Inc.**

*Executive Offices:* PROVIDENCE, R. I., 260 West Exchange Street

Cable Address: "SPRINKLER, NEW YORK"

### **FIRE PROTECTION OFFICES**

ALBANY, 11 North Pearl Street

ATLANTA, 240 North Highland Avenue, N.E.

BALTIMORE, 1205 Garrett Building, Redwood and South Streets

BOSTON, 131 State Street

BUFFALO, 110 Pearl Street

CHARLOTTE, 1431 West Morehead Street

CHICAGO, 4425 South Western Avenue

CINCINNATI, 1914 Union Central Life Building

CLEVELAND, 1005 Society for Savings Building

COLUMBUS, 150 East Broad Street

DALLAS, 1315 Marilla Street

DETROIT, 2639 Barlum Tower

MEMPHIS, 209 Farnsworth Building

MILWAUKEE, 735 North Water Street

MINNEAPOLIS, 240 Seventh Avenue, South

NEWARK, 207 Market Street

NEW ORLEANS, 1422 New Orleans Bank Building

NEW YORK, 420 Lexington Avenue

LONG ISLAND CITY, 23rd Street and 50th Avenue

PHILADELPHIA, Erie Avenue and D Street

PITTSBURGH, 235 Fourth Avenue

PROVIDENCE, 260 West Exchange Street

ROCHESTER, 65 Broad Street

ST LOUIS, 1140 Central Industrial Avenue

## **Grinnell Company of the Pacific**

### **FIRE PROTECTION OFFICES**

LOS ANGELES, 520 Mateo Street

OAKLAND, 2230 Peralta Street

SAN FRANCISCO, 601 Brannan Street, cor. Fifth

SEATTLE, 3101 Elliott Avenue, cor. Bay Street

## **Grinnell Company of Canada, Ltd.**

### **FIRE PROTECTION OFFICES**

TORONTO, ONT., 2440 Dundas Street, West

MONTREAL, QUE., 700 Beaumont Avenue

WINNIPEG, MAN., 850 Somerset Building

VANCOUVER, B. C., 1132 Hamilton Street



